§ 69.61 Excluded spaces.

(a) *Excluded space* means an enclosed space which is excluded from volume (V) in calculating gross tonnage. Except as under paragraph (g) of this section, this section lists the excluded spaces.

(b) A space that is within a structure and that is opposite an end opening extending from deck to deck (except for a curtain plate of a height not exceeding by more than one inch the depth of the adjoining deck beams) and having a breadth equal to or greater than 90 percent of the breadth of the deck at the line of the opening is an excluded space, subject to the following:

(1) Only the space between the actual end opening and a line drawn parallel to the line or face of the opening at a distance from the opening equal to one-half of the breadth of the deck at the line of the opening is excluded. (See § 69.75, figure 1.)

(2) If, because of any arrangement (except convergence of the outside plating as shown in § 69.75, figure 3), the breadth of the space is less than 90 percent of the breadth of the deck, only the space between the line of the opening and a parallel line drawn through the point where the athwartship breadth of the space is equal to 90 percent or less of the breadth of the deck is excluded. (See § 69.75, figures 2 and 4.)

(3) When any two spaces, either of which is excluded under paragraphs (b)(1) or (b)(2) of this section, are separated by an area that is completely open except for bulwarks or open rails, these two spaces must not be excluded if the separation between the two spaces is less than the least half breadth of the deck in way of the separation. (See § 69.75, figures 5 and 6.)

(4) When the deck at the line of an opening has rounded gunwales, the breadth of the deck is the distance between the tangent points indicated in § 69.75, figure 11.

(c) A space that is open to the weather and that is under an overhead deck covering with no connection on the space's exposed sides between the covering and the deck other than the stanchions necessary for the covering's support is an excluded space. An open rail or bulwark fitted at the vessel's side does not disqualify the space from being an excluded space if the height between the top of the rail or bulwark and the overhead structure or curtain plate (if fitted) is not less than 2.5 feet or one-third of the height of the space, whichever is greater. (See § 69.75, figure 7.)

(d) A space in a side-to-side structure directly in way of opposite side openings not less than 2.5 feet in height or one-third of the height of the structure, whichever is greater, is an excluded space. If the opening is only on one side of the structure, the space to be excluded is limited inboard from the opening to a maximum of one-half of the breadth of the deck in way of the opening. (See § 69.75, figure 8.)

(e) A space in a structure immediately below an uncovered opening in the deck overhead is an excluded space, if the opening is exposed to the weather and the space to be excluded is limited to the area of the opening. (See § 69.75, figure 9.)

(f) A recess in the boundary bulkhead of a structure which is exposed to the weather and which has an opening that extends from deck to deck without a means of closing is an excluded space, if the interior width of the space is not greater than the width of the opening and extension of the space into the structure is not greater than twice the width of the opening. (See § 69.75, figure 10.)

(g) Any space described in paragraphs (b) through (f) of this section which fulfills at least one of the following conditions is not an excluded space:

(1) The space is fitted with shelves or other means designed for securing cargo or stores.

(2) The opening that would otherwise permit the space to be excluded space is fitted with a means of closure.

(3) Other features of the space make it possible for the space to be closed.

§ 69.63 Net tonnage.

Net tonnage (NT) is determined by the formula:

$$NT = K_2 V_C \left(\frac{4d}{3D}\right)^2 + K_3 \left(N_1 + \frac{N_2}{10}\right),$$

in which:

V_c = total volume of cargo spaces in cubic meters.

$K_2 = 0.2 + 0.02 \log_{10} V_c$.

$$K3 = 1.25\left(\frac{GT + 10{,}000}{10{,}000}\right)$$

D = molded depth amidships in meters, as ''molded depth'' is defined in §69.53.

d = molded draft amidships in meters, as ''molded draft'' is defined in §69.53.

N_1 = number of passengers in cabins with not more than eight berths, as ''passenger'' is defined in §69.53.

N_2 = number of other passengers, as ''passenger'' is defined in §69.53.

GT = gross tonnage as determined under §69.57.

N_1 plus N_2 must equal the total number of passengers the vessel is permitted to carry as indicated on the ship's Passenger Certificate. If N_1 plus N_2 is less than 13, both N_1 and N_2 are zero.

$\left(\frac{4d}{3D}\right)^2$ must not be greater than unity.

$K_2 V_c \left(\frac{4d}{3D}\right)^2$ must not be less than 0.25 GT.

NT must not be less than 0.30 GT.

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§69.65 Calculation of volumes.

(a) Volumes V and V_c used in calculating gross and net tonnages, respectively, must be measured and calculated according to accepted naval architectural practices for the spaces concerned.

(b) The volume of the hull below the upper deck is determined as follows:

(1) If the number and location of sections originally used in making other calculations which relate to the form of the vessel (such as displacement volumes and center of buoyancy) are reasonably available, Simpson's first rule may be applied using those sections.

(2) If the number and location of stations originally used are not reasonably available or do not exist and the hull is of conventional design with faired lines, Simpson's first rule may be applied using a number and location of stations not less than those indicated in §69.109(g)(1).

(3) If the hull is of standard geometric shape, a simple geometric formula that yields a more accurate volume may be used.

(4) If the lines of the hull are not fair, the volume may be measured by using a combination of methods under this section.

(c) The volume of structures above the upper deck may be measured by applying the superstructure provisions in §69.113 or by any accepted method or combinations of methods.

(d) Measurements must be taken, regardless of the fitting of insulation or the like—

(1) To the inner side of the shell or structural boundary plating, in vessels constructed of metal; and

(2) To the outer surface of the shell or to the inner side of structural boundary surfaces, in all other vessels.

(e) When determining the volume of a cargo space, measurements must be taken without consideration for insulation, sparring, or ceiling fitted within the space.

(f) Measurements must be to the nearest one-twentieth of a foot.

(g) Calculations must be made on a worksheet and must be sufficiently detailed to permit easy review. The measurement procedures used must be identified on the worksheet.

§69.67 Marking of cargo spaces.

Cargo spaces used in determining volume (Vc) for calculating net tonnage must be permanently marked with the letters ''CC'' (cargo compartment) which are at least four inches in height and positioned so as to be visible at all times.

§69.69 Issuance of an International Tonnage Certificate (1969).

On request of the vessel owner, an International Tonnage Certificate (1969) is issued for a vessel measured under this subpart that is 79 feet or more in registered length and that will engage on a foreign voyage. The Certificate is issued to the vessel owner or master and must be maintained on board the vessel when it is engaged on a foreign voyage.

§69.71 Change of net tonnage.

(a) When a vessel is altered so that the net tonnage is increased, the new net tonnage must be applied immediately.